

ANTELOPE VALLEY DISTRICT
LAKE HUGHES

2009
WATER
QUALITY
REPORT



INTRODUCTION

At California Water Service Company (Cal Water), our goal is to supply you with safe, high-quality drinking water, 24 hours per day, seven days per week, 365 days per year. As part of that effort, we are pleased to provide this annual water quality report, which includes information about where your water comes from, what it contains, how it compares to state and federal standards, and how you can help us conserve water. It also explains the steps we take to protect your water supply.

If you have any questions, suggestions, or concerns, please contact your local Customer Center, either by phone or through the contact link on our web site. Also, please watch for bill inserts, where you will find announcements of any water-related public meetings or workshops, as well as important information about your water. Additional information and time-sensitive announcements about your water can be found at www.calwater.com.

2009 WATER QUALITY REPORT

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

WHERE YOUR WATER COMES FROM

We serve approximately 1,450 customer connections in our Fremont Valley, Grand Oaks, Lancaster, Lake Hughes, and Leona Valley water systems.

Most of the water we provide is pumped from local aquifers by wells located throughout our service areas. The Lake Hughes system includes two active groundwater wells and two storage tanks. We have completed construction on a third well, which should go into service this year. We have also installed a manganese treatment plant at the Lake Hughes well that has manganese issues and expect it to become operational this year. Please refer to the table in this report for information about the manganese concentrations detected in the system, the source of manganese, and the aesthetic effects that manganese can have on your water. Cal Water proactively maintains and upgrades its facilities to ensure a reliable, high-quality supply.

INSIDE WATER QUALITY



Meeting strict water quality regulations is a full-time job for dozens of Cal Water employees. One of those employees is Sophie James, Cal Water's Manager of Laboratory Services.

"I didn't set out to work in water quality," says Sophie. "It just happened. I graduated from college with a Bachelor of Science Degree in chemistry and was hired by an agency that placed temporary employees in scientific positions. My first assignment was with an environmental laboratory that conducted drinking water and wastewater testing for a local municipality. There I began my career in water quality. I've worked at Cal Water for almost four years."

Fourteen years of laboratory experience, undergraduate and graduate degrees in chemistry, and management experience have helped prepare Sophie for this demanding position.

Of course, Sophie doesn't manage water quality on her own. "Our water quality team is made up of 25 employees. This includes our laboratory group, which is, among other things, responsible for providing analytical services to all of our water systems; our project management team, which handles the regulatory aspects of water quality; and our administrative and management teams."

The effort required to meet water quality standards is determined by the water source. Some water sources require less treatment and testing, and some require more. We dedicate whatever resources are necessary to ensure that our customers receive good, clean water. As Sophie says, "We mean it when we say that protecting customer health and safety is our highest priority!"

DRINKING WATER SOURCE ASSESSMENT AND PROTECTION PROGRAM (DWSAPP)

In August 2001 and December 2002, Cal Water submitted to the California Department of Public Health a DWSAPP report for each water source in the water system. The DWSAPP report identifies possible sources of contamination to aid in prioritizing cleanup and pollution prevention efforts. All reports are available for viewing or copying at our Customer Center.

The water sources in your district are considered most vulnerable to schools, high-density housing, recreational activities, wastewater, grazing, agriculture, urban-/stormwater runoff, wildlife, known contaminant plumes, above-ground and underground storage tanks, and historic gas stations.

We encourage customers to join us in our efforts to prevent water pollution and protect our most precious natural resource.

WHAT ABOUT FLUORIDE?

Fluoride occurs naturally in many water sources, but Cal Water does not add fluoride to your water supply.

California law requires Cal Water to add fluoride as funding from federal grants or other sources becomes available. In the meantime, you might wish to check with your dentist to see if fluoride supplements are recommended for any children in your family. Note that supplements may not be recommended for children who attend a school that has fluoridated water.

More information about fluoridation, oral health, and current issues can be found on the CDPH web site at www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx. For general information on water fluoridation, visit us online at www.calwater.com.

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WATER MAIN FLUSHING

Due to drought conditions, Cal Water only conducts flushing when necessary to ensure good water quality or when local fire agencies require fire protection data. By opening certain fire hydrants under controlled conditions, we remove minerals and sediment that build up in water lines over time or enter during water line repairs.

Although it may seem wasteful to the casual observer, flushing is actually an important and necessary water utility activity that is endorsed by the American Water Works Association and conducted in accordance with guidelines set by the California Department of Public Health. Cal Water is also actively researching practical methods of capturing water released during flushing so that it can be put to additional use.

You will continue to receive water if we need to flush in your area, but the pressure might be lowered temporarily. If you notice any discoloration or sediment in your water after we have flushed, please allow water to run from your outside hose bib until it clears.



LEAD IN WATER

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing.

The water delivered by Cal Water to your meter meets all water quality standards, but your home plumbing can affect water quality. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.



If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

POTENTIAL SOURCES OF CONTAMINATION

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency (USEPA) Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap and bottled) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the California Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people, such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly people, and infants, can be particularly at risk from infections. These people should seek advice from their health care providers about drinking water. USEPA/ Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

LOVE YOUR YARD; PROTECT YOUR WATER

A significant portion of residential water use — more than half in most cases — occurs outdoors. And, sadly, much of the water used outdoors is lost to evaporation, runoff, and overwatering. This wasted water can affect water quality. Why? Because what goes around, comes around.

When it comes to water, nature is the ultimate recycler. The water from your garden hose may go on to help form a rain cloud or seep into the ground to feed a nearby well. Over the course of time, it may end up back in your garden hose, ready to start the whole process over again.

But when water from your yard runs into storm drains or finds its way into the water table, it can take contaminants with it, such as fertilizers and pesticides. When that happens, Cal Water must spend time, money, and energy to remove those contaminants before the water can be provided to customers.

The California State Water Resources Control Board has a number of recommendations for ways to reduce the impact of these contaminants, including:

- Buy household and garden products that are environmentally safe, and don't buy more than you need.
- Apply all household and garden products sparingly, and carefully follow instructions printed on the package.
- Do not apply lawn or garden products when rain is forecast.
- Take unused pesticides, fertilizers, weed killers, and paints to a recycling station.



Read the instructions carefully before using fertilizers, pesticides, or any other substance in your garden or yard, and consult an expert if you still have questions. You can help prevent runoff and reduce water contaminants by reducing the amount of water you use outdoors.

In addition to carefully and conservatively managing your garden, shortening your sprinkler run times can make a significant difference. You can also be greener by eliminating sprinkler overspray, repairing leaks, and turning off your sprinklers when it rains.

Last, but not least, think about what kind of plants you have. Native and drought-tolerant plants generally use less water and might require less fertilizer and pesticide than plants that are not indigenous to your area.



CONSERVATION: WORKING TOGETHER TO MEET OUR GOALS

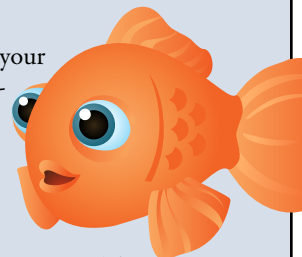
In November 2009, Governor Schwarzenegger signed Senate Bill 7 into law. This bill requires that water retailers in the state of California achieve a 20% reduction in their customers' water usage by December 31, 2020.

Cal Water offers a variety of traditional and innovative programs to help you conserve, including:

- Rebates on select water-efficient appliances for both home and business.
- Many high-efficiency plumbing fixtures — including showerheads and hose nozzles — available to our customers at no charge.
- Educational materials on a variety of topics, including conservation gardening, checking for leaks around the house, and more.
- Conservation-related events and school programs.

But, in the end, water conservation comes down to you, the customer. Even a small effort can add up to a lot of savings. With that in mind, here are some ways you can help us meet California's conservation goals:

- If you see a problem with a water pipe, such as water coming up through a crack in the street, report it to Cal Water immediately.
- Hunt down and fix leaks all around your house. This includes leaky pipes, faucets, and hoses, and toilets that may have slow, quiet leaks (you can use a dye tablet in your toilet tank to check for these "hidden" leaks).
- If you have a dishwasher or washing machine, only run full loads. Even if your machine has a setting for partial loads, you'll save more water by only running it when it's full.
- Make sure that all of your faucets have high-efficiency aerators. A faucet aerator can make a small stream of water do the work of a significantly larger stream.
- Speaking of faucets, don't leave them running when you're not actively using water. This is true whether you're brushing your teeth, shaving, using a garden hose, or washing dishes by hand.
- Keep your showers as short as practical, and make sure you have a high-efficiency showerhead.
- Don't use a garden hose to clean paved areas — stick with a broom. And if you use a hose to wash your car, use a shut-off hose nozzle or, even better, a bucket of water.



Visit www.calwater.com/conservation to learn more about programs available in your area, apply for an appliance rebate, request water-saving fixtures, and find other ways that Cal Water can help you conserve water.

WATER QUICK FACTS

- “Flushing” occurs when a Cal Water employee opens a fire hydrant and releases water. This is done to remove sediment from the water lines and ensure that water circulates adequately throughout the system. Because of our focus on conservation, Cal Water does not flush water lines unless absolutely necessary. Fire hydrants may also be opened for testing purposes.
- Dirt or sand can occur naturally in groundwater or enter water lines during water main repairs. Flushing helps remove dirt and sand in the water.
- If you notice white particles in your water or your water pressure is lower than usual, check your faucet aerators for buildup. If they are clean, you may be seeing minerals that have built up in your water lines, home plumbing, or water heater.
- It is also important to maintain your water heater as directed by the manufacturer. Not doing so can lead to wasted energy, mineral buildup, and other problems. If you detect an odor in your hot water that is not present in your cold water, you may need to adjust, flush, or repair your water heater. Check with the manufacturer for details. If you detect an odor in both the hot and cold water, inform your local Customer Center.
- If your water looks milky or bubbly, it’s probably because of harmless air bubbles. If the water is allowed to sit, the air will dissipate and the water will clear. If it doesn’t, contact your local Customer Center.
- Naturally occurring organics and metals can give your water color. These typically do not pose a health hazard, but you should report colored water to your local Customer Center. If a faucet has not been used for a period of time, rust or residue from pipes may have collected, discoloring your water. Let the water run for a minute, and it should return to normal (while the faucet runs, collect the water in a bucket for use in your garden).
- You might occasionally hear news stories warning about the possibility of trace amounts of pharmaceuticals in tap water. It is important to remember that the quantities of pharmaceutical substances found in these reports are generally measured in parts per trillion — amounts millions of times smaller than therapeutic doses. Although no current scientific study has found that human health issues can arise from these miniscule amounts of pharmaceuticals, Cal Water reminds you that you can help protect your water supply by responsibly disposing of drugs that are expired or no longer needed. Do not flush them down the toilet or put them in the sink.
- Some people buy home water-treatment units to improve the aesthetic qualities of their water, but according to the United States Environmental Protection Agency, these units are rarely necessary for health reasons. If you choose to install a home treatment unit, be sure to follow the manufacturer’s maintenance instructions. Improperly maintained units can cause water quality problems, such as bacteria growing in carbon filters that are not replaced as recommended.
- Both tap and bottled water must meet strict water quality standards, but tap water is subject to more frequent testing. Although bottled water is generally not better quality than what comes out of your tap, it’s definitely more expensive — a Cal Water customer could fill multiple 55-gallon drums with water for much less than the average price of a 20-ounce container of bottled water.

If you have any questions, please contact Chris Whitley, Local Manager, at (800) 680-1160.

PRIMARY DRINKING WATER STANDARDS			GROUNDWATER					
Radiological	Year Tested	Unit	MCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Gross alpha particle activity	2006–2007	pCi/L	15	(0)	No	3.4–5.0	4.3	Erosion of natural deposits
Uranium	2006–2007	pCi/L	20	0.43	No	4.8–5.6	5.2	Erosion of natural deposits
Inorganic Chemicals	Year Tested	Unit	MCL	PHG	Exceeded Standard?	Range	Average	Source of Substance
Barium	2009	ppm	1	2	No	ND–0.12	0.06	Discharges of oil-drilling waste and from metal refineries; erosion of natural deposits
Fluoride	2009	ppm	2	1	No	0.61–0.7	0.66	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as nitrate)	2009	ppm	45	45	No	3.4–11	7.2	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
DBP Precursor	Year Tested	Unit	MRDL	MRDLG	Exceeded Standard?	Range	Average	Source of Substance
Total organic carbon ¹	2007	ppm	TT	n/a	No		0.5	Various natural and manmade sources

PRIMARY DRINKING WATER STANDARDS			DISTRIBUTION SYSTEM-WIDE					
Disinfectant and Disinfection Byproducts	Year Tested	Unit	MCL	PHG (MCLG)	Exceeded Standard?	Result	Average	Source of Substance
Total haloacetic acids	2009	ppb	60	n/a	No		0.6	Byproduct of drinking water chlorination
Total trihalomethanes	2009	ppb	80	n/a	No		2.4	Byproduct of drinking water chlorination
Chlorine	2009	ppm	4	4	No	0.13–2.3	0.4	Drinking water disinfectant added for treatment
Microbiological	Year Tested	Unit	MCL	PHG (MCLG)	Exceeded Standard?	Highest Monthly		Source of Substance
Total coliform (systems with <40 samples/month)	2009	positive samples	1	(0)	No	1		Naturally present in the environment

OTHER REGULATED SUBSTANCES			DISTRIBUTION SYSTEM-WIDE					
Metals	Year Tested	Unit	AL	PHG	Exceeded Standard?	90th Percentile	# Sites > AL / Sites Sampled	Source of Substance
Copper	2008	ppm	1.3	0.3	No	0.25	0 / 10	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

SECONDARY DRINKING WATER STANDARDS AND UNREGULATED COMPOUNDS			GROUNDWATER					
Inorganic Chemicals	Year Tested	Unit	SMCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Calcium	2009	ppm	n/a	n/a	No	75–84	80	Erosion of natural deposits
Chloride	2009	ppm	500	n/a	No	7–74	41	Erosion of natural deposits; seawater influence
Hardness	2009	ppm	n/a	n/a	No	270–370	320	Erosion of natural deposits
Magnesium	2009	ppm	n/a	n/a	No	20–39	30	Erosion of natural deposits
Manganese ²	2009	ppb	50	n/a	Yes	ND–230	79	Leaching from natural deposits
pH	2009	Units	n/a	n/a	No	6.68–6.77	6.74	Inherent characteristic of water
Sodium	2009	ppm	n/a	n/a	No	21–60	41	Erosion of natural deposits; seawater influence
Specific conductance	2009	µS/cm	1600	n/a	No	560–950	755	Erosion of natural deposits; seawater influence
Sulfate	2009	ppm	500	n/a	No	40–64	52	Runoff/leaching from natural deposits; industrial wastes
Total dissolved solids	2009	ppm	1000	n/a	No	320–550	435	Runoff/leaching from natural deposits
Turbidity (groundwater)	2009	NTU	5	n/a	No	ND–0.43	0.22	Soil runoff
Vanadium	2007	ppb	NL=50	n/a	No		3	Erosion of natural deposits; manufacturing of alloys and steel

¹Total organic carbon (TOC) has no health effects; however, TOC provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects such as liver, kidney, or nervous system problems, and may lead to an increased risk of cancer. Concerns regarding disinfection byproducts are based upon exposure over many years.

²Manganese is present at levels that exceed the SMCL of 50 ppb. The manganese SMCL was set to protect you against unpleasant aesthetic effects, such as color, taste, odor, and the staining of plumbing fixtures and clothing when washed. Exceeding this SMCL does not pose a health risk. Treatment for manganese at the source has been installed and is expected to be operational in 2010.

WATER HARDNESS

Water is considered soft if its hardness is less than 75 parts per million (ppm), moderately hard at 75 to 150 ppm, hard at 150 to 300 ppm, and very hard at 300 ppm or higher. The water in your service area ranged from 270 to 370 ppm (15.8 to 21.6 grains per gallon), with an average of 320 ppm (18.7 grains per gallon).

Water's hardness varies with its source. Hard water is not harmful to health, so the choice to buy a water softener is an aesthetic one. However, some water softeners add salt to the water, and this can cause problems at wastewater treatment plants. Additionally, people on low-sodium diets should be aware that some water softeners increase the sodium content of the water.

µS/cm = measure of specific conductance

n/a = not applicable

ND = not detected

NTU = nephelometric turbidity unit

pCi/L = picoCuries per liter (measure of radioactivity)

ppb = parts per billion (micrograms per liter)

ppm = parts per million (milligrams per liter)

SMCL = secondary maximum contaminant level

HOW TO READ THIS TABLE

We test your water for more than 100 regulated contaminants. The table in this report lists only those that were detected.

The table shows water quality test results divided into two main sections: "primary standards" and "secondary standards." Primary standards protect public health by limiting the levels of constituents in drinking water. Secondary standards are limits for substances that could affect the water's taste, odor, or appearance.

DEFINITIONS

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as are economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Notification Level (NL): A health-based advisory level for an unregulated contaminant in drinking water. It is used by the California Department of Public Health to provide guidance to drinking water systems.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health, along with their monitoring, reporting, and water treatment requirements.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other required action by the water provider.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.